MSFC Safety Bulletins

What Happened:

A crew was working to replace the boom cable on the 360-ton capacity mobile 'ringer' crane, which is supported by a 66 ft X 66 ft concrete pad, located south of Building 4564. The employee was moving to a position behind the crane, walking on the concrete pad, in order to assist in feeding the wire rope cable through the crane structure. He was wearing rubber-soled safety shoes, was empty-handed, and was not pushing or pulling any tools or equipment. As he was walking, his right foot slipped forward, causing him to fall backwards. The employee suffered strains and contusions to his left elbow and left knee, which are believed to have resulted from the position of the joints when his body impacted the concrete, as well as impact force. After 28 days of work task restrictions, and several months of medical treatment and monitoring, the employee underwent arthroscopic knee surgery, and lost several work days.

What caused this to happen:

A specially constructed concrete pad, 66ft X 66ft, supports the crane on a permanent basis. At the rear of the pad, a concrete catch basin, 21ft X 33ft, has been constructed to collect the oil and grease which may drip from the crane, as well as any contaminated rain water run-off from the pad. The concrete pad is slightly sloped, to optimize the drainage of oils, lubricants, and rain water into the catch basin. During heavy rainstorms, the catch basin has been observed to collect sufficient run-off to raise the contaminated water level above and onto the sloped concrete pad, which was constructed with 6-inch high dike walls to prevent environmental contamination under such conditions. Under dry, sunny, warm conditions, the concrete pad is covered with a residue of hydraulic oil and lubricating oil, which creates slippery footing in the dry state. At the time of the accident, the concrete remained wet from previous rainstorms, which increased the slippery conditions. Under normal operating conditions, personnel do not walk or work on the concrete pad, except to access the crane operator's cab or perform maintenance operations. Under standard MSFC operating procedures, the catch basin is inspected on a weekly basis, and the need for basin drainage is reported to the responsible organization.

What You Can Do:

- As an interim control measure, permanent stanchions and cable have been installed around the perimeter of the concrete pad, as well as 'Slippery Walking Surface, Pressure Wash Before Entering' warning signs on all approaches to the pad. As an additional control measure, personnel will pressure wash the surface of the concrete pad using a solvent capable of removing the film of accumulated oil and grease residues. All water/solvent solution generated by the cleaning operation will be collected in the catch basin, and will require removal and disposal as hazardous waste. The cleaning must be completed prior to walking or working on the concrete pad. Should personnel fail to implement these controls, there is a high potential for recurrence of this type of accident.

- It is recommended that the facility design be reviewed and modified to eliminate the potential hazards associated with the walking and working surface. It is suggested that installation of grating, elevated above the surface of the concrete pad, would provide greater traction and eliminate the potential for overflow and run-off of contaminated water to create slippery conditions.